

## CLAIMS

### WHAT IS CLAIMED IS:

1. A covered roll for use in calendaring web sheets, said cover roll comprising:
  - (a) a metal roll core base substantially cylindrical in shape and arranged for rotation during use, said roll core base comprising an outer surface;
  - (b) an adhesive layer disposed over and secured to said outer surface of said roll core base; and
  - (c) a cover formed of a thermoplastic material, said cover comprising a thermoset resin infused reinforcement fiber layer, said fiber layer circumferentially surrounding and secured to said adhesive layer, whereby said cover is bound to said rotatable roll core base.
2. The roll core of Claim 1 wherein said fiber layer comprises glass fibers.
3. The covered roll of Claim 1 wherein said fiber layer comprises carbon fibers.
4. The covered roll of Claim 1 wherein said fiber layer comprises aramid fibers.
5. The covered roll of Claim 1 wherein said thermoplastic material includes a concentration of carbon fibers.
6. The covered roll of Claim 1 wherein said thermoplastic material includes a concentration of aramid fibers.
7. The covered roll of Claim 1 wherein said thermoplastic material comprises a dual layer construction comprising an understock and a top stock, said top stock comprising a glass fiber concentration between 0% and 40% by weight glass fiber.
8. The covered roll of Claim 1 wherein said thermoplastic material comprises a dual layer construction comprising an understock and a top stock, said top stock comprising an aramid fiber concentration between 0% and 30% by weight aramid fiber.
9. The covered roll of Claim 1 wherein said thermoplastic material comprises a dual layer construction comprising an understock and a top stock, said top stock comprising a carbon fiber concentration between 0% and 35% by weight carbon fiber.
10. The covered roll of Claim 1 wherein said thermoplastic material comprises a dual layer construction comprising a top stock formed of a thermoplastic material having a predetermined fiber concentration and an understock formed of a thermoplastic material having a predetermined fiber concentration, and wherein the fiber concentration of said top stock is approximately equal to the fiber concentration of said understock.

11. The covered roll of Claim 1 wherein said thermoplastic material is formed of polyetherimide.

12. The covered roll of Claim 1 wherein said thermoplastic material is formed of polyethersulfone.

5 13. The covered roll of Claim 1 wherein said thermoplastic material is formed of polyphenylene sulfide.

14. The covered roll of Claim 1 wherein said thermoplastic material is formed of polyetheretherketone.

10 15. The covered roll of Claim 1 wherein said thermoplastic material is formed of polyphenylene oxide.

16. The covered roll of Claim 10 wherein said fibers are glass fibers.